

Normally, the base station and a radio network control device (RNC Radio Network Controller) are part of a base station subsystem (RNS Radio Network Subsystem). A radio communication system normally has several base station subsystems, that are connected to a core network (CN Core Network). The radio network control device of the base station subsystem is connected to an access device (SGSN Serving GPRS Support Node) of the core network.

In addition to individual useful information, data that is available to several users is also transmitted in radio communication systems. For example, such useful information includes video streams or other broadcast and/or multicast information. The services for the transmission of useful information, that are not just provided individually for a single subscriber but are instead available to several subscribers, are summarized under the term MBMS (Multimedia Broadcast/Multicast Service). Different MBMS (Multimedia Broadcast/Multicast Service) services are provided by the core network, usually as separate data streams.

From document XP-002275698 "Definitions and Characteristics of Multicast Channels", LG Information and Communications, Ltd. Korea, TSG-RAN Working Group 2 (Radio Layer 2 and Radio Layer 3), Stockholm, 8-11.03.1999, pages 1-11, a multicast control channel is known on which control information for multicast services transmitted on a multicast channel is transmitted. Certain sections on the multicast control channel are allocated to a specific International Mobile Group Identity (IMGI) so that a subscriber station logged on for a certain multicast service needs to receive and decode only the

corresponding section of the multicast control channel in order to receive corresponding control information.

Before the useful information is made available to several subscribers as a service, the subscriber station of the subscribers requiring the service is informed prior to the actual transmission of the useful information of the service. This informing of the subscriber station is necessary so that the receivers can be configured. Depending on the mode in which a subscriber station is set (e.g. "connected mode" or "idle mode"), the information is provided, for example, in the form of a "notification" or "paging". Normally, group-specific mechanisms are used to provide the information, with several subscriber stations being messaged at the same time. An example of paging for multicast services is described in document XP-002275700, "Considerations on MBMS Notification", Siemens, 3GPP RAN2 & RAN3 Joint MBMS Meeting Wokingham, Berkshire, UK, 15/16.01.2003, pages 1-3.

Claims

1. Method for the transmission of data in a radio communication system,
with subscriber stations (UE1, UE2; UE) being informed prior to the transmission of useful information as a service (MBMS) which is provided for several subscribers, characterized in that
the subscriber stations (UE1, UE2) are informed (PAZ2; PAZ4) by means of a service-dedicated paging display channel (MBMS PICH), with the paging indicator (PAZ2; PAZ4) containing information on a service control channel (MCCH).
2. Method in accordance with claim 1,
characterized in that
several discontinuous reception cycles of paging indicators (PAZ2; PAZ4) are transmitted in the MBMS service-dedicated paging indicator channel (MBMS PICH).
3. Method in accordance with claim 2,
characterized in that
several discontinuous reception cycles of paging indicators (PAZ2; PAZ4) with identical and/or different repetition rates are transmitted in the MBMS service-dedicated paging indicator channel (MBMS PICH).
4. Method in accordance with claim 2 or 3,
characterized in that
several discontinuous reception cycles of paging indicators (PAZ2; PAZ4) are allocated service-specific or service-class specific on the MBMS dedicated paging indicator channel (MBMS PICH).

5. Method in accordance with claim 4,
characterized in that at least one paging indicator
(PAZ4) on the MBMS service-dedicated paging indicator
channel (MBMS PICH) contains information for service
identification for various services and/or various types
of service.
6. Method in accordance with one of claims 1 to 5,
characterized in that
one subscriber station (UE1, UE2; UE) to acquire the
information at the subscriber station (UE1, UE2; UE)
using an MBMS service-dedicated paging indicator channel
(MBMS PICH), periodically receives either the paging
indicator (PAZ2; PAZ4) of the discontinuous reception
cycles on the MBMS service-dedicated paging indicator
channel (MBMS PICH) or receives paging indicator
information (PAI) on a cell paging indicator channel
(CELL PICH)
7. Method in accordance with claim 6,
characterized in that the paging indicator information
(PAI) on the cell paging indicator channel (CELL PICH)
contains several bits for indicating the service
information on the MBMS service-dedicated paging
indicator channel (MBMS PICH).
8. Method in accordance with claim 7,
characterized in that
the paging indicator information (PAI) on the cell paging
indicator channel (CELL PICH) includes an indication of
the service class and/or a paging-specific sequence
number.

9. Base station (Node B) for transmission of data in a radio communication system,
with means for informing subscriber stations (UE1, UE2; UE) prior to the transmission of useful information as a service (MBMS), that is provided for several subscribers, characterized in that
means for creating and transmitting information (PAZ2; PAZ4) to subscriber stations (UE1, UE2; UE) by paging indicators using an MBMS service-dedicated paging indicator channel (MBMS PICH) are present, with the paging indicators (PAZ2; PAZ4) containing information on a service control channel (MCCH).
10. Base station (Node B) in accordance with claim 9, characterized in that
means for transmitting several discontinuous reception cycles of paging indicators (PAZ2; PAZ4) are present in the MBMS service-dedicated paging indicator channel (MBMS PICH).
11. Base station (Node B) in accordance with claim 10, characterized in that
means for transmitting several discontinuous reception cycles of paging indicators (PAZ2; PAZ4) with identical and/or different repetition rates in the MBMS service-dedicated paging indicator channel (MBMS PICH) are present.
12. Base station (Node B) in accordance with claim 10 or 11, characterized in that
means for allocating several discontinuous reception cycles of paging indicators (PAZ2; PAZ4) on the MBMS

dedicated paging indicator channel (MBMS PICH) to specific services or specific service classes is provided.

13. Subscriber station (Node B) for performing a method in accordance with one of claims 1 to 8, characterized in that
a subscriber station (UE1, UE2; UE) has means for acquiring the message (PAZ2; PAZ4) at the subscriber station (UE1, UE2; UE) using an MBMS service-dedicated paging indicator channel (MBMS PICH), with either the paging indicators (PAZ2; PAZ4) of the discontinuous reception cycles on the service-dedicated paging indicator channel (MBMS PICH) being periodically received or paging indicator information (PAI) being received on the cell paging indicator channel (CELL PICH), and with the paging indicators (PAZ2; PAZ4) containing information on a service control channel (MCCH).
14. Radio communication system especially for performing a method in accordance with one of claims 1 to 8, having at least one base station (Node B) in accordance with one of claims 9 to 12 and/or a subscriber station (UE1, UE2; UE) in accordance with claim 13.